DETAILED ACTION

1. Request for reopening prosecution in the 9/1/2011 response to examiner's answer filed on 7/7/2011 and subsequently amended answer on 8/26/2011 is acknowledged. Claims 1, 5-18, 20-22, 25-27 are currently pending. It is noted that Claims 1 and 20 were amended After-Final and entered in the Advisory Action mailed on 2/22/2011.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims **1, 5-18, 20-22, 25-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bukshpan et al (US 2002/0198928) in view of Ravkin et al (US 2003/0134330).

Regarding claims **1** and **20**, Bukshpan et al teach a method and device for recording microscopic images with high optical resolution of cells ("particles or organisms") disposed on the surface of light sensitive layer 4A on a sample carrier 240 provided with fluidics system 116 ("flow cuvette") on a motorized stage 106. The carrier is scanned by moving the stage motorized stage ("wherein the optical sensor and measuring cell are moving relative to one another while the contents of the measuring cell are imaged" "measuring cell is moving along the sensor". It is noted that "imaged" is sufficiently broad to read on scanned by detectors) and the images of the cells disposed on the surface of the layer are acquired by the camera ("recording the image of the suspension by an optical sensor") and stored in memory (Para. 0162). Bukshpan

teaches the system 100 may (optionally) further include a fluidics system 116. The fluidics system 116 may include suitable fluidics elements for controllably adding or removing fluids to the sample carriers ("suspended in a liquid" "introducing the suspension in a measuring cell" "flowing cuvette"). If a developer is not initially included in the solution including the sample cells or particles, the fluidics system 116 may add a suitable developer solution to the samples for performing the development of the photosensitized regions of the layer 4 (Para. 0147). Bukshpan et al are silent that the camera ("sensor") is moving along the measuring cell and the measuring cell is imaged onto said optical sensor by the movement of optical elements.

Ravkin et al teach a method for multiplexed detection of analytes by reacting them with probe molecules attached to carriers. Ravkin et al teach the method includes sensing trans-illumination such as absorbance or microscope pattern such as bright field, dark field, or phase contrast or epi-illumination such as to detect fluorescence. Ravkin teach the light source and the detector can be on the same side of the carrier such as a microplate for the epi-illumination or positioned on opposite sides of the carrier for trans-illumination. Ravkin et al further teach the detector may detect light by moving from well(s) to well(s), through movement of the detector, the sample holder, or both ("moving relative to one another while the contents are imaged" "sensor is moving"). Accordingly, detector 1918 may be fixed or may be configured to move relative to microplate 1912, to enable scanning. When detector 1918 is fixed, stage 1920 may be configured to move portions of microplate 1912 past detector 1918. In some embodiments, an optical element (see below) may be movable to direct light from

different portions of the microplate to the detector. It is desirable to move the detector instead of the carrier to minimize movement that could disrupt the reaction within the carrier.

Simple substitution of one known element for another to obtain predictable results is held to be obvious. Therefore, it would have been obvious to one of ordinary skill in the art to substitute the step of moving the detector of Ravkin et al for the step of moving the stage of Bukshpan because they are equivalent steps to scan sample carriers in order measure trans-illumination or epi-illumination assays and to provide the above advantage of minimize movement that could disrupt the reaction within the carrier.

Regarding claims **5-7**, Bukshpan et al teach the immobilization ("sinking or rising of the objects within the cuvette can be effected by one or more of the following: biological techniques, physical techniques, chemical techniques, sedimentation, and buoyancy") of particles to the light sensitive surface and imaging the adhering particles with the light source on one side and the detector on the other (Para. 0090 and 0129) ("allowing the particles to sink onto the ground of the measuring cell or into a region above the ground, wherein only part of the measuring cell contains the particles or organisms to be examined, imaging the ground or the region above with a high optical resolution, and covering the ground or the region above by the optical sensor" "allowing the particles to rise to an upper limiting surface of the measuring cell or into a region below the upper limiting surface, wherein only part of the measuring cell contains the particles or organisms to be examined, imaging the upper limiting surface or the region

below with a high optical resolution, and covering the upper limiting surface or the region below by the optical sensor").

Regarding claims **8-10, 21-22**, Bukshpan et al teach the optical system can be either trans-illumination ("transmitted light illumination, wherein a light source is situated on one side of the measuring cell, and the optical sensor and an objective sensor are located on the opposite side of the measuring cell" "bright field illumination") (Para. 0129 and Fig. 4A) or epi-illumination ("providing incident light illumination by situating a, light source, an objective, and the optical sensor on the same side of the measuring cell") (Para. 0130).

Regarding claims **11-13, 16, 27**, Bukshpan et al teach the transmitted light can be dark field illumination, phase contrast illumination (Para. 0129) and fluorescence illumination (Para. 0127).

Regarding claims **14-15**, Bukshpan et al teach the illuminating the objects in the measuring cell with a defined spectral intensity distribution of the incident light by a suitable light source or the insertion of one or more suitable filters ("enables the optical sensor to be illuminated with a defined spectral intensity distribution of the incident light") (Para. 0123).

Regarding claim **17**, Bukshpan et al teach the cells can be pre-treated with Giemsa stain ("admixing the suspension with stains prior to the introducing step") (Para. 0230-0234).

Regarding claim **18**, Bukshpan et al teach the using of FITC visualization filter and the use of Cy3 visualization filter for the same field of view (It is noted that

"changing the one or more filters automatically or manually" is read on the use of two different filters, since there is a changing either automatically or manually of the filters) (Para. 0359).

Regarding claims **25-26**, Bukshpan et al teach condenser optics 262 and filter 260 are on the same side as the light source ("a screen and lens system on the same side of the measuring cell as the light source" "the screen and lens system is a condenser") (Para. 0156).

Response to Arguments

Applicant's arguments filed 9/1/2011 have been fully considered but they are not persuasive. Applicants argue that Bukshpan et al fails to teach any method or device in which a flow cuvette and an optical sensor move relative to one another during the optical recording of microscopic images. This is not convincing because Bukshpan discloses the carrier is scanned by moving the stage motorized stage while a camera acquires images. It is noted that "while the contents of the flow cuvette are imaged" is sufficiently broad to read on the step of scanning by detectors that occurs while the stage is moving in Bukshpan.

Applicants argue that Ravkin does not disclose movement of a detector during the measurement but instead discloses a system in which a detector moves stepwise from one reaction well to the next reaction well of a microtitre plate, without intermediate measurement. It is noted that the claim requires the relative movement occur "while the contents of the flow cuvette are imaged" that is sufficiently broad to read on the scanning that includes movement as seen in Ravkin when the detectors scan by moving

from well to well. There is no requirement in the claims that there are intermediate measurements. Furthermore, the Ravkin reference teaches it is obvious to move either the detector or the carrier when relative motion is desirable. Bukshpan meets all the limitations required of scanning during movement of the motorized stage but does not disclose the detector in motion along the stage. Ravkin teaches the equivalence of either the detector or carrier moving during scanning. Therefore Ravkin remedies the deficiency of Bukshpan by teaching these relative motions are equivalent.

Conclusion

3. The Final Rejection made in this office action is the same rejection made in the Non-Final Rejection mailed on 6/8/2010. *See* pp. 2-7 para. 3 and 7) and Final rejection mailed on 11/8/2010. *See* pp. 2-7, para. 3 and 7. The amended claims 1 and 20 were amended After-Final to incorporate the limitation of claim 2 that was rejected in both previous office actions. These amended claims were entered by the Advisory action mailed on 2/22/2011 because the amendment simplified the issues for appeal by narrowing the claims 1 and 20 to include the features in claim 2. The Examiners Answer, mailed on 7/7/2011, included a new ground of rejection that was necessitated by the amendment filed After-Final on 2/8/2011 that incorporated the limitation of claim 2 into claim 1 and 20 (p.4 para. 6).

4. Accordingly, Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See

MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS M. WHITE whose telephone number is (571)270-3747. The examiner can normally be reached on Monday-Thursday, EST 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, In Suk Bullock can be reached on (571) 272-5954. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DENNIS M WHITE/
Examiner, Art Unit 1772